BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 6: e93882
doi: 10.3897/biss.6.93882

OPEN ACCESS

Conference Abstract

Linking Fennoscandian Species of Two Fungal Genera: A test case for linked open data

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Received: 23 Aug 2022 | Published: 23 Aug 2022

Citation: Liljeblad J, Lahti T, Sjöro E, von Bonsdorff-Salminen T, Bendiksen K, Skarp LS, Döring M (2022) Linking Fennoscandian Species of Two Fungal Genera: A test case for linked open data. Biodiversity Information Science and Standards 6: e93882. https://doi.org/10.3897/biss.6.93882

Abstract

In Norway, Sweden and Finland, we all have our own taxonomy initiatives, mapping our biodiversity (Lahti and Skarp 2019, Sjödin Skarp 2019, Skarp et al. 2019). Together these countries make up most of Fennoscandia, sharing a large part of the fauna, flora and fungi. It was only natural for us to start cooperating through a Nordic Taxonomy Initiative, sharing expertise and knowledge. Our implementation of Linked Open Data (LOD) is a first step toward automated sharing of information about Fennoscandian species. By linking taxon concepts, we can share observations and facilitate our efforts to combat invasive alien species, as well as assessing conservation status of our native species (Liljeblad and Lahti 2019a, Liljeblad and Lahti 2019b).

We picked the fungal genera *Hygrophorus* Fr. and *Tricholoma* (Fr.) Staude (Basiciomycetes: Agaricales) as test cases for matching species concepts between our countries. We downloaded lists of species from Checklistbank as a starting point, including synonym names and documenting the specific versions. However, the identifiers for these taxa are not independent of name and concept changes here, so this backbone was imported into taxonid.org. A spreadsheet with these taxa was then complemented with taxa from the three respective countries' taxonomic databases.

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In *Hygrophorus*, there were 35 species with 28 present in Finland, 33 in Norway and 34 in Sweden. The mycologists among us discussed the full list during a virtual workshop and agreed upon how to interpret their respective taxonomies compared to the list at taxonid.org. Next, we copied the identifier for each species in taxonid.org to our respective national databases.

Matching up all species of *Hygrophorus* took about 3 hours for 3 people, making for a total of 9 hours of effort excluding things such as exporting and preparing checklists for comparison. Adding the identifiers from taxonid.org into the respective national databases was a simple import of a maximum one hour each. We then did the same for the more species-rich genus *Tricholoma*.

In the process, besides the links, we have established closer personal contact, synced our views on the taxonomy and had a chance to tidy up the nomenclature. When attempting to share more than taxonomic information, we have come to realize how our countries differ in usage of standard terms documenting residency, reproductive status as well as that of establishment means. For now, we will have to make do with a simple absence/presence, but having the actual taxon links is the prerequisite we are now starting to fulfill.

Keywords

LOD, taxon concepts, linking, national checklists

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Presented at

TDWG 2022

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